Mav. 2003

WorkKeys/MEAP/CTE – Michigan Academic Standards Crosswalk

This project was a collaborative effort between the Michigan Department of Career Development, Office of Career and Technical Preparation, and identified state level experts, professional organizations, and content area teachers in response to requests from administrators and educators. Each crosswalk was developed to the Standards level of the Michigan Curriculum Frameworks. For further development, local district CTE programs will need to do benchmark level linkage with their local curriculum.

As we move forward in the educational process to prepare students for their future, we must recognize our responsibility to provide high quality technical and academic education to best prepare these students for their future goals.

Overview:

- This is a tool to assist Local Educational Agencies to develop crosswalks at the benchmark level for specific programs.
- CTE curriculum Standards /unit goals were the basis of the crosswalk
- Local district programs need to do benchmark level linkage with their local curriculum.
- Curriculum Standards support the curriculum, with a broad-based focus.
- WorkKeys crosswalks used national occupational job profile information as the basis of determining performance level expectations.
- For new program application submission starting 2003-2004, crosswalk at the benchmark level will be required.

Benefits

- Provides linkages to National Occupational Standards for improvement in program delivery
- Will assist "highly qualified" instructional staff in documenting accountability and supporting new national initiatives
- Demonstrate CTE support of the Michigan Curriculum Frameworks and MEAP objectives
- To enable districts with CTE programs to strengthen communication with curriculum directors, superintendents and building administrators.
- Curriculum crosswalk will encourage communications between Career and Technical and academic educators
- Assist locals in establishing support for academic credit granted for Career and Technical Education programs

Plan Dissemination

- On MDCD/OCTP Web site
    - Posted by pathway
    - Link to Agriscience Web site
- State update meetings
- Presentation to Teacher groups
- Presentations to Administrator groups
- Distribution to Teacher Educators
- Feature item in Newsletters, updates to field
- MDE
- Available to Education Institutions

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
1) Students will analyze interrelationships between natural resources and Michigan agricultural production, foster natural resource conservation and maximize the reuse of recoverable resources.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. . 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction,	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	can be established by changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.	iteration, and algorithm design.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

	Strand 4: Using Scientific knowledge in Physical Science: 4.1 All students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter 4.2 All students will investigate, describe and analyze ways in which matter changes; describe how living things and human technology change matter and transform energy; explain how visible changes in matter are related to atoms and molecules; and how changes in matter are related to changes in energy.			

	Strand 5: Using Scientific knowledge in Earth Science. 5.1 All students will describe the earth's surface; describe and explain how the earth's features change over time; and analyze effects of technology on the earth's surface and resources. 5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.			

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
2) Students shall understand the economic importance of the agricultural and natural resources sectors in Michigan, the nation, and the world. Students shall appreciate the importance of supervised experience programs in the total agricultural education program.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society.

	Strand 2: <u>Reflecting on Scientific Knowledge</u> 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
3) Students shall understand the interrelationships of Michigan agriculture, natural resources and society, including factors that influence agricultural activities, while fostering resource conservation.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 2.1 Students develop spatial sense, use shape as an analytical and descriptive tool, identify characters and define shapes, identify properties and describe relationships among shapes.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by	2.2 Students identify location of objects, identify location relative to other objects, and describe the effects of transformations (e.g. sliding, flipping, turning, enlarging, reducing) on an object. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.	and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

	Strand 4: Using Scientific knowledge in Physical Science: 4.1 All students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter 4.2 All students will investigate, describe and analyze ways in which matter changes; describe how living things and human technology change matter and transform energy; explain how visible changes in matter are related to atoms and molecules; and how changes in matter are related to changes in energy. **Strand 5:** Using Scientific knowledge in Earth Science. 5.1 All students will	6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.		

	describe the earth's surface; describe and explain how the earth's features change over time; and analyze effects of technology on the earth's surface and resources. 5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.			

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
4) Students shall understand the interrelationships among agriculture, natural resources, and the government, including factors that influence policy decisions. Students shall appreciate the wide variety of leadership development activities available	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution

through the National FFA Organization.	reconstruct previously learned knowledge. **Strand 2**: <u>Reflecting on Scientific Knowledge</u> 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.	variation and sources of variability to compare patterns of change. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting,	write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—	and consumption of goods and services to make personal and societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
1) Students shall understand growth and development of plants, including the functions of plant parts, and reproductive systems.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.1 All students will apply an understanding of cells to the functioning of multi-cellular organism; and explain how cells, grow, develop, and reproduce. 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. 3.3 All students will investigate the explain how characteristics of living	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze	6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

	how human and environments interact. **Strand 4**: Using Scientific knowledge in Physical Science: 4.4 All students will describe sounds and sound waves; explain shadows, color, and other light phenomena; measure and describe vibrations and waves; and explain how waves and vibrations transfer energy. **Strand 5:** Using Scientific knowledge in Earth Science. 5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.			

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
2) Students will understand the role of soil in plant production including factors which affect soil productivity.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe	precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact. **Strand 4**: <u>Using Scientific knowledge in Physical Science:</u> <u>4.1 All</u> students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter <u>4.2</u> All students will investigate, describe and analyze ways in which matter changes; describe how living things and human technology change matter and transform energy; explain how visible changes in matter are related to atoms and molecules; and how changes in matter are related to changes in energy.	of a number, and translate among equivalent representations. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

	Strand 5: Using Scientific knowledge in Earth Science. 5.1 All students will describe the earth's surface; describe and explain how the earth's features change over time; and analyze effects of technology on the earth's surface and resources. 5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.			

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
3) Students shall understand the role of nutrients in plant growth and development.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe	precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact. **Strand 5:** Using Scientific knowledge in Earth Science. 5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.	of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
4) Students shall understand the biology of pests and their impact on agriculture with special reference to socio-economic and environmentally sound pest management.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.	problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
5) Students shall understand the concept of land measurement and land descriptions.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 2.2 Students identify location of objects, identify location relative	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively.	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution

	2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 4**: <u>Using Scientific knowledge in Physical Science:</u> <u>4.1 All</u> students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter energy.	to other objects, and describe the effects of transformations (e.g. sliding, flipping, turning, enlarging, reducing) on an object. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding	5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate	and consumption of goods and services to make personal and societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
6) Students shall examine and assess careers in the plant science field.			1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

			ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
1) Students shall understand classification, natural selection, and the role of domestic animals in agriculture and their importance in the food production chain.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time. 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact. .	analyze ideas like recurrence relations, induction, iteration, and algorithm design.	and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
2) Students will develop a basic understanding of the structure, function, and maintenance of the major animal body systems and their components using examples drawn from humans as well as animals of economic importance.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	Strand 2: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.1 All students will apply an understanding of cells to the functioning of multi-cellular organism; and explain how cells, grow, develop, and reproduce.	outcomes, make predictions, and identify the degree of confidence they have in their predictions.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
3) Students will develop a basic understanding of the genetics, breeding parturition, and animal behaviors.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	Strand 2: <u>Reflecting on Scientific Knowledge</u> 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** <u>Using scientific knowledge in Life Science</u>. 3.1 All students will apply an understanding of cells to the functioning of multi-cellular organism; and explain how cells, grow, develop, and reproduce. 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits	outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

	can be established by changing or manipulating genes. 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.		and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
4) Students shall develop an understanding of the factors involved in animal nutrition, animal feeding, and the basic feedstuffs available for that purpose.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms. 3.2 Students will examine data	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	Strand 2: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. **Strand 3:** Using scientific knowledge in Life Science. 3.1 All students will apply an understanding of cells to the functioning of multi-cellular organism; and explain how cells, grow, develop, and reproduce.	and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
5) Students shall understand the concept of animal health and become familiar with methods of identification of unhealthy animals, treatment, preventative measures, and the causal agents of common health problems in animals of economic importance. .	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge. **Strand 2**: Reflecting on Scientific Knowledge 2.1 All students will analyze claims for their	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision. 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and

	scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.	3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively. 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.	and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity	societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
6) Students will develop an appreciation for the factors involved in and the ability to evaluate and select livestock for specific uses.	**Strand 1:** Constructing New Scientific Knowledge 1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

	Strand 2: <u>Reflecting on Scientific Knowledge</u> 2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.		ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
1) Students shall be able to apply basic financial management principles to information entered in the Michigan Record Book in order to assist them in making future decisions.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers,	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

		understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
2) Students shall understand the role of finance and the lending system in the agricultural industry.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic and contemporary literature and	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use

		about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity of enduring issues recurring	of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
3) Students shall understand the basic functions of the marketing process in agriculture.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and analyze a wide variety of classic	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and

		about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims	and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate understanding of the complexity	societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
4) Students will understood the basic concepts of computer literacy and appreciate the role of the computer applications in agriculture.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships. 1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change. 4.1 Students experience counting and measuring activities to develop intuitive sense about	1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and

		numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers. 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers. 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems. 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the	analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate	services to make personal and societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

		knowledge available, and make critical judgments about claims that are made in probabilistic situations. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
5) Students shall understand the four types of business structures in agriculture.			1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments. 2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society. 3. Students will use knowledge of American government and politics to make informed decisions about government and their communities. 4. Students will use knowledge of the production, distribution and consumption of goods and

			analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate	services to make personal and societal decisions about the use of scarce resources. 5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

	Michigan Curriculum Frameworks *(As Assessed by the Michigan Educational Assessment Program –MEAP)*			
Program Area Standards Identification Here	**Science Strands**	**Mathematics Content Standards**	**English Language Arts Standards**	**Social Studies Strands**
6) Students will gain an understanding of the importance of effective communications and the role that communication plays in the agriculture and natural resources industries.			1. All students will demonstrate the ability to read and comprehend general and technical materials. 2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions. 3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts. 4. All students will use the English language effectively. 5. All students will read and	5. Students will use methods of social science to answer questions about society. 6. Student will analyze public issues and construct and express thoughtful positions of these issues. 7. Student will act constructively to further the public good.

			analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society. 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate	

			understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts. 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others. 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students will analyze interrelationships between natural resources and Michigan agricultural production, foster natural resource conservation and maximize the reuse of recoverable resources.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students shall understand the economic importance of the agricultural and natural resources sectors in Michigan, the nation, and the world. Students shall appreciate the importance of supervised experience programs in the total agricultural education program.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students shall understand the interrelationships of Michigan agriculture, natural resources and society, including factors that influence agricultural activities, while fostering resource conservation.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Natural Resources
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
4) Students shall understand the interrelationships among agriculture, natural resources, and the government, including factors that influence policy decisions. Students shall appreciate the wide variety of leadership development activities available through the National FFA Organization.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students shall understand growth and development of plants, including the functions of plant parts, and reproductive systems.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students will understand the role of soil in plant production including factors which affect soil productivity.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students shall understand the role of nutrients in plant growth and development.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
4) Students shall understand the biology of pests and their impact on agriculture with special reference to socio-economic and environmentally sound pest management.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
5) Students shall understand the concept of land measurement and land descriptions.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Plant Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
6) Students shall examine and assess careers in the plant science field.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students shall understand classification, natural selection, and the role of domestic animals in agriculture and their importance in the food production chain.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students will develop a basic understanding of the structure, function, and maintenance of the major animal body systems and their components using examples drawn from humans as well as animals of economic importance.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students will develop a basic understanding of the genetics, breeding parturition, and animal behaviors.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
4) Students shall develop an understanding of the factors involved in animal nutrition, animal feeding, and the basic feedstuffs available for that purpose. .		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
5) Students shall understand the concept of animal health and become familiar with methods of identification of unhealthy animals, treatment, preventative measures, and the causal agents of common health problems in animals of economic importance.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
6) Students will develop an appreciation for the factors involved in and the ability to evaluate and select livestock for specific uses.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Animal Science
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
7) Students will develop an appreciation for the products of Michigan's livestock industry and will have an understanding of how diverse the animal industry is.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students shall be able to apply basic financial management principles to information entered in the Michigan Record Book in order to assist them in making future decisions.		Applied Mathematics: 3 4 5 6 7 Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		4 5 Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students shall understand the role of finance and the lending system in the agricultural industry.		Applied Mathematics: 3 4 5 6 7 Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		4 5 Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students shall understand the basic functions of the marketing process in agriculture.		Applied Mathematics: 3 4 5 6 7 Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		4 5 Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
4) Students will understood the basic concepts of computer literacy and appreciate the role of the computer applications in agriculture.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
5) Students shall understand the four types of business structures in agriculture.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols,	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Information 3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	pictures, schematics, charts, and graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			a group process with ideas, suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Agriscience and Natural Resources
Business Management and Marketing
CIP Code 02.9999
CONTENT STANDARDS CROSSWALK

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
6) Students will gain an understanding of the importance of effective communications and the role that communication plays in the agriculture and natural resources industries.		Applied Mathematics: Applied Technology Listening and Writing: Listening 1 2 3 4 Locating Information 3 4 5 Observation 3 4 5 Reading for	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations**.** 2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals. 3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols,	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner**)** 2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information. 3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills. 4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments 5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Information 3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	pictures, schematics, charts, and graphs. 4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results. 5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others. 6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively. 7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			a group process with ideas, suggestions, and efforts. 8. All students will communicate ideas to support a position and negotiate to resolve divergent interests. 9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies. 10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	